WHAT IS CLAIMED IS:

1. A method for estimating a head-related transfer function (HRTF) for an individual, comprising the steps of:

training an estimation model which maps observable characteristics of a plurality of individuals to audio-related HRTF data for the individuals, respectively;

obtaining observable characteristics for a subject whose HRTF is unknown; and

processing said obtained characteristics in accordance with said model to produce an estimate of an HRTF for said subject.

2. The method of claim 1 wherein said observable characteristics are derived from an image of an individual's ear.

3. The method of claim 2 wherein said image includes the individual's head, and said observable characteristics include the location of an ear on the head.

4. The method of claim 3 wherein said observable characteristics include the relative orientation of the ear on the head.

5. The method of claim 2 wherein said observable characteristics include the shape of the individual's ear.

6. The method of claim 5 wherein said shape is determined relative to a canonical ear template.

7. The method of claim 5 wherein said observable characteristics include the three-dimensional shape of the ear.

8. The method of claim 2 wherein said image is a grayscale image in which color direction for the color gray is customized to the subject's skin color.

9. The method of claim 1 wherein said observable characteristics include physical dimensions of an individual.

10. The method of claim 9 wherein said physical dimensions include the spacing between an individual's ears.

11. The method of claim 9 wherein said physical dimensions include the spacing between the individual's ears and shoulders.

12. The method of claim 9 wherein said physical dimensions are derived from an image of the individual.

13. The method of claim 1 wherein said audio-related HRTF data includes an interaural time delay.

14. The method of claim 1 wherein said audio-related HRTF data includes frequency warping relating to a canonical HRTF.

15. The method of claim 1 wherein said audio-related HRTF data includes a warped Fourier-transform magnitude for an HRTF.

16. The method of claim 1 wherein said estimation model comprises a coupled eigen-space model.

17. The method of claim 1 wherein said estimation model is based upon a support vector network.

18. The method of claim 1 wherein said training and processing steps are implemented with neural network processing.

19. A method for estimating a head-related transfer function for a given person, comprising the steps of:

obtaining a head-related transfer function for each of a plurality of individuals;

providing at least one image of each of said individuals which depict physical characteristics of each individual;

computing a model which defines a coupling between the physical characteristics of a person and that person's head-related transfer function;

providing an image of a person whose head-related transfer function is unknown to obtain data about physical characteristics of that person; and

applying said data to said coupling model to estimate a head-related transfer function for that person.

20. The method of claim 19 wherein said image includes the person's outer ear.

21. The method of claim 20 wherein said image includes the person's head.

22. The method of claim 19 wherein said head-related transfer functions are obtained by measuring each individual's response to a plurality of sounds which propagate from sources that are located at different respective positions relative to the individual.

23. A computer-readable medium containing a program which executes the steps of:

computing an estimation model which maps observable characteristics of a plurality of individuals to audio-related HRTF data for the individuals, respectively; and

processing observable characteristics for a subject whose HRTF is unknown in accordance with said model to produce an estimate of an HRTF for said subject.

24. The computer-readable medium of claim 23 wherein said observable characteristics are derived from an image of an individual's ear.

25. The computer-readable medium of claim 24 wherein said image includes the individual's head, and said observable characteristics include the location of an ear on the head.

26. The computer-readable medium of claim 24 wherein said observable characteristics include the shape of the individual's ear.

27. The computer-readable medium of claim 23 wherein said observable characteristics include physical dimensions of an individual.

28. The computer-readable medium of claim 27 wherein said physical dimensions are derived from an image of the individual.

29. The computer-readable medium of claim 23 wherein said estimation model comprises a coupled eigen-space model.

30. The computer-readable medium of claim 23 wherein said estimation model is based upon a support vector network.

31. The computer-readable medium of claim 23 wherein said processing step is implemented with neural network processing.

32. A system for generating spatial sound, comprising:

a sound source which produces plural sound signals that are respectively associated with different locations relative to a listener;

a head-related transfer function (HRTF) estimator which processes at least one image of the listener in accordance with a model that maps observable characteristics of a plurality of individuals to audio-related HRTF data for the individuals, to produce an estimate of an HRTF for the listener;

an HRTF filter which modifies said sound signals in accordance with the estimated HRTF for the listener; and

an audio output device for generating sounds represented by the modified sound signals.

33. The system of claim 32 wherein said image depicts at least one of the listener's ears.

34. The system of claim 33 wherein said image includes the listener's head.

35. The system of claim 32 wherein said model comprises a coupled eigen-space model.

36. The system of claim 32 wherein said model is based upon a support vector network.